3.14 Land Use, Agricultural and Forest Resources

This section analyzes the land use, agricultural, and forest resources impacts of the Proposed Action and alternatives. For the land use analysis, the section describes current land use types, planned uses, and land ownership and management in the area of analysis, described below. For the agricultural and forest resources analyses, the section focuses on the direct changes to land uses that would occur as a result of removal of the J.C. Boyle Dam, Copco 1 and Copco 2 Dams, and Iron Gate Dam (the Four Facilities) as described in the Klamath Hydroelectric Settlement Agreement (KHSA) and alternatives. The Four Facilities are in the Lower Klamath Basin below Keno Dam, also owned by PacifiCorp. The indirect impacts on agricultural and forest uses that may occur from changes in the water distribution in the region from implementation of the Klamath Basin Restoration Agreement (KBRA) are also described. KBRA actions are primarily focused on the Upper Klamath Basin, but also include actions in the Lower Klamath Basin.

This section does not address the potential effects of removal of the Four Facilities on property values and changes in property tax revenues. See Section 3.15, Socioeconomics, for potential effects on property values. Additionally, removal of the dams would alter the flood regime for the portion of the river downstream of Iron Gate Dam. However, flooding issues are not relevant to land use. Changes in flood risk are described in Section 3.6, Flood Hydrology.

The public scoping process identified several questions that will not be addressed in the Klamath Facilities Removal Environmental Impact Statement/Environmental Impact Report (EIS/EIR). For instance, the public asked about establishing new property lines when reservoirs and the river channel reconfigure. Property line adjustments are not relevant to the EIS/EIR analysis and are not described in the KHSA (KHSA Section 7.6.4). The EIS/EIR does describe potential changes in land use that would occur if the dams were removed.

Participants in the scoping process also sought information regarding whether property owners would have first right to purchase property between the current reservoir shoreline and the newly established river channel boundary. The KHSA details that the PacifiCorp lands currently inundated by the existing reservoirs will be transferred to the State of Oregon or the State of California, as applicable, or to a designated third party transferee, to be managed for public interest purposes such as fish and wildlife habitat restoration and enhancement, public education, and public recreational access (KHSA Section 7.6.4). This EIS/EIR includes an analysis of all potential property transfers outlined in the KHSA.

3.14.1 Area of Analysis

For this analysis, the land use area was defined as lands encompassed by the Federal Energy Regulatory Commission (FERC) boundary identified in the FERC EIS (2007), surrounding lands that could be affected by implementation of the KHSA and private lands adjacent to the reservoirs and the Klamath River downstream of the reservoirs to the estuary that would be affected by the removal of the dams and loss of the reservoirs.

The Four Facilities that would be removed under the Proposed Action are in two counties, Siskiyou in California and Klamath in Oregon, and are not within any incorporated cities. The area of analysis for the KHSA is shown in Figure 3.14-1. The area of analysis includes the areas adjacent to the Four Facilities. The City of Yreka is included because its water supply facilities would be affected by the Proposed Action. In addition, lands downstream of the Iron Gate Dam that may be subject to flooding with or without the dams were identified (see Appendix J for revised 100 year floodplain maps).

To account for the effects of KBRA implementation, the area of analysis includes the agricultural lands that receive water from the Bureau of Reclamation's (Reclamation) Klamath Project in Klamath, Siskiyou, and Modoc Counties, and two of the wildlife refuges in the Klamath Basin National Wildlife Refuge System, the Tule Lake National Wildlife Refuge (NWR) and the Lower Klamath NWR (Figure 3.14-2). These areas are all within the Upper Klamath Basin above Keno Dam. Reclamation's Klamath Project contains approximately 200,000 acres of farmland and 35,000 acres of wetlands in the three counties along the California-Oregon border. Of the 200,000 acres of irrigable land in the project, water deliveries are typically made to between 180,000 – 196,000 acres each year, depending on available water supplies (Personal Communication, Mike Green, March 23, 2011). Section 1.2.4 describes Reclamation's Klamath Project in more detail. Agricultural areas in the Lower Klamath Basin, downstream of Keno Dam, do not receive water from Reclamation's Klamath Project.

3.14.1.1 Klamath County, Oregon

Klamath County is in south central Oregon. The county is bordered on the south by California, on the east by Lake County, on the north by Deschutes County, and on the west by Jackson and Douglas Counties. The county, Oregon's fourth largest, has 6,135 square miles (Klamath County 2010a). Klamath County is home to about 66,380 people, with about 20,000 of those people residing in the city limits of Klamath Falls (U.S. Census Bureau 2000, U.S. Census Bureau 2000–2008). Approximately 73 percent of the County is managed by federal and state agencies, including United States Fish and Wildlife Service (USFWS), National Park Service (NPS), the Bureau of Land Management (BLM), and the Oregon Department of State Lands (ODSL).

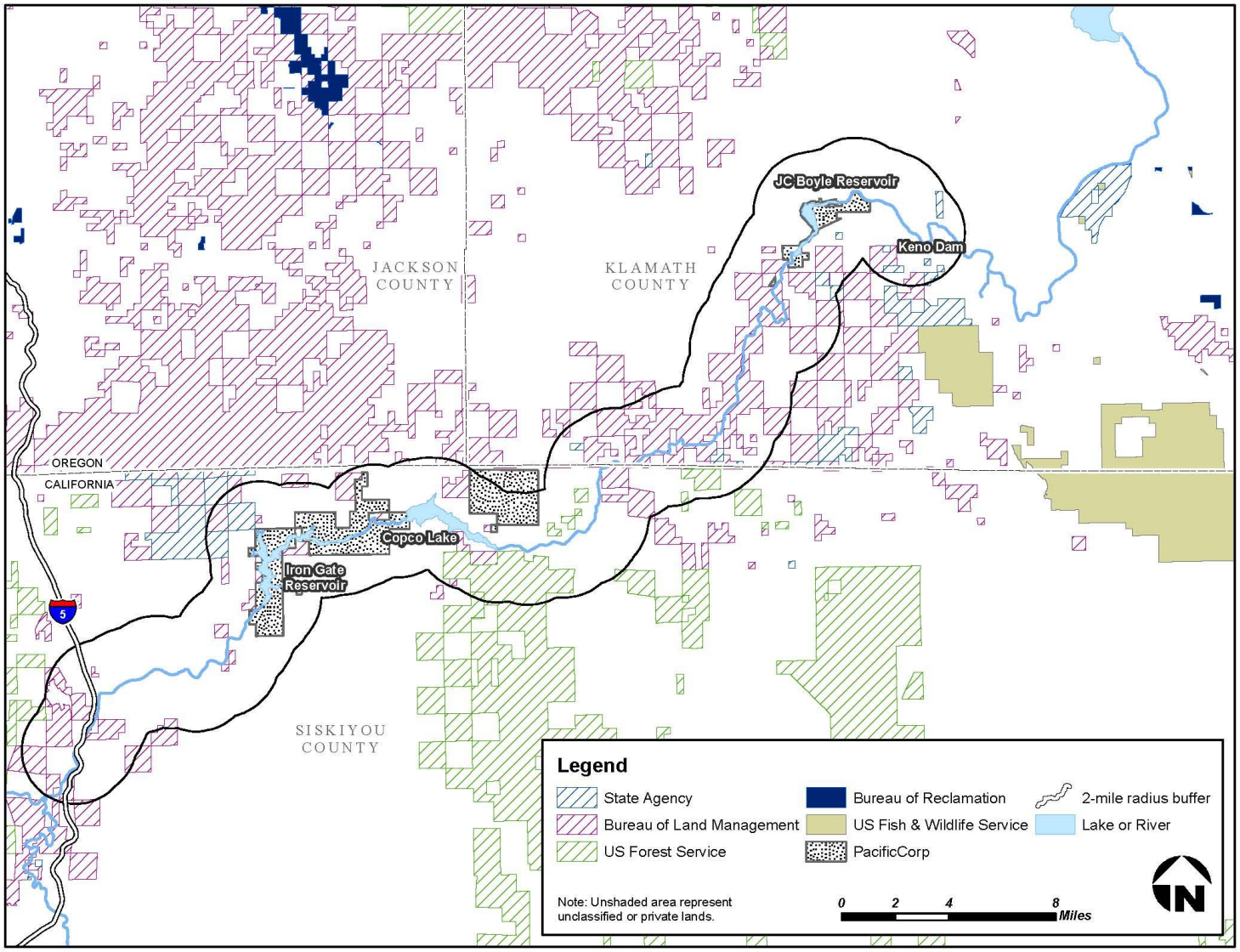

Figure 3.14-1. Area of Analysis for the Land Use Effects of the KHSA

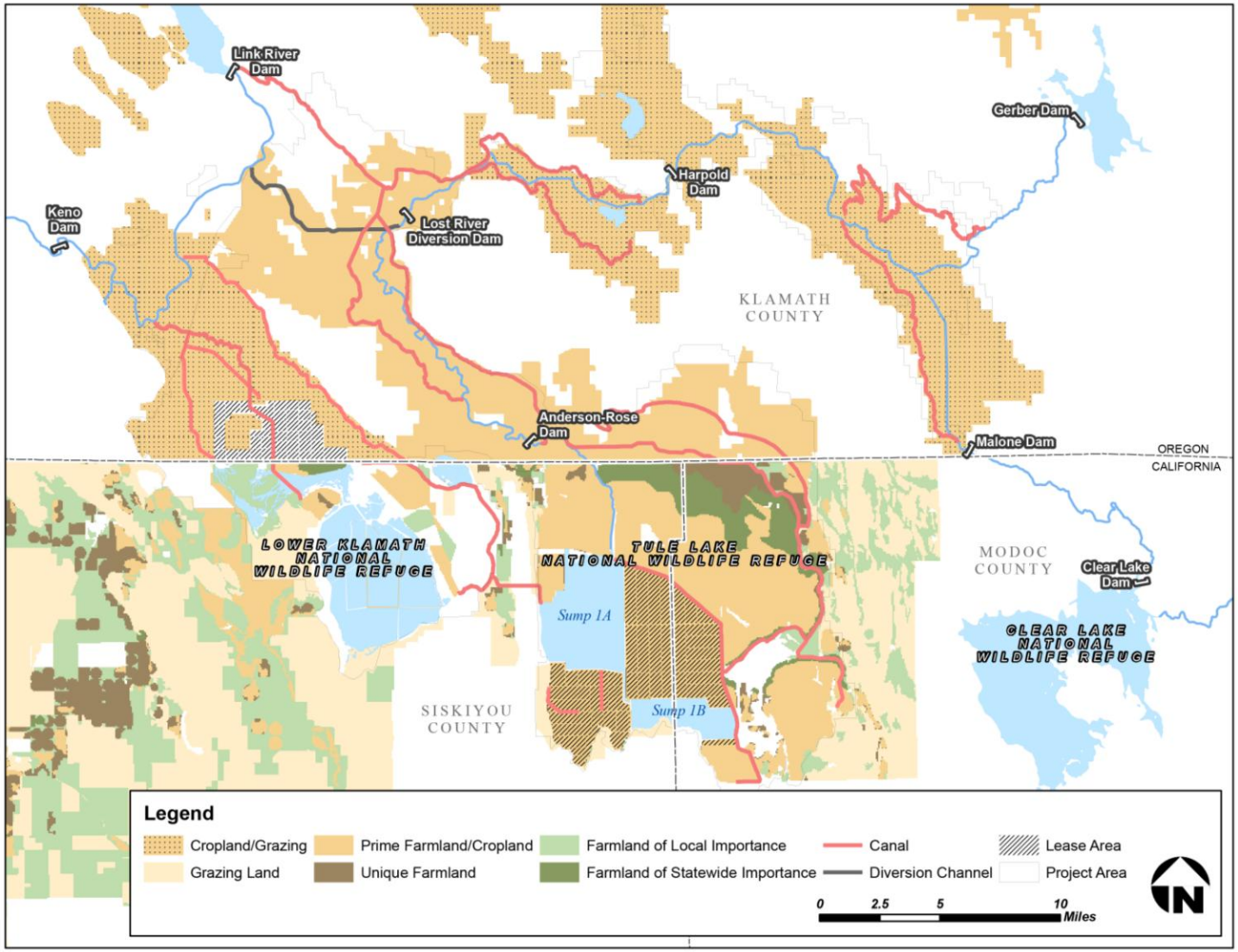

Figure 3.14-2. National Wildlife Refuges and Agricultural Designations in and around the Reclamation's Klamath Project

3.14.1.2 Siskiyou County, California

Siskiyou County is in inland northern California, adjacent to the Oregon border. It is the fifth largest county in the state and has an area of approximately 6,340 square miles with a population of 44,328 (U.S. Census Bureau 2000–2008). More than 60 percent of the County is managed by federal and state agencies, including the United States Forest Service (USFS), BLM, the USFWS, and California Department of Fish and Game (CDFG). These lands are maintained in various National Forests, Parks, Wilderness Areas, National Grasslands, NWRs, other public lands and State Wildlife Areas (Siskiyou County 2010).

3.14.1.3 Modoc County

Modoc County is just east of Siskiyou County in the northeastern corner of California, where it borders Oregon to the north and Nevada to the east. The county is 4,203 square miles and has approximately 9,100 residents (Modoc County 2011). Almost 70 percent of the county is federally owned in the Modoc National Forest, the Modoc and Tule Lake National Wildlife Refuges, and BLM lands managed out of the Alturas Field Office (Modoc County 2011). Approximately 29 percent of the county is in private ownership, with the remaining one percent split between state lands (.7 percent), County owned property (.04 percent), City properties (.03 percent), and railroads and utility companies (.15 percent) (Modoc County 2011). Part of the Tule Lake NWR and Reclamation's Klamath Project is in western Modoc County (Figure 3.14-2).

3.14.1.4 Klamath Basin National Wildlife Refuge System

The Tule Lake NWR and the Lower Klamath NWR are both managed for wildlife habitat and croplands. In 2009, the Lease Land Program leased 22,828 acres of the two refuges for crop production. Of this, 7,518 acres or approximately 33 percent were certified organic, up from 5,753 in 2006, and 1,584 acres were set aside for the walking wetland program, a long-term crop rotation program that alternates the land use between wetlands for wildlife uses and crops for agricultural leases (Department of the Interior [DOI] 2009a).

The Tule Lake NWR covers 39,116 acres, of which 15,000 acres are dedicated to agricultural leases, in addition to another 2,300 acres dedicated to cereal grains and alfalfa cooperatively managed by the USFWS and local farmers (USFWS 2009). The farmland produces barley, oats, wheat, onions, potatoes, and alfalfa. Barley, wheat, and oats cover most of the acreage and potatoes dominate the row crops (USFWS 2010).

The Lower Klamath NWR is 46,000 acres and straddles the California/Oregon border. Approximately 5,500 acres are leased to farmers through the Reclamation's Public Lease Lands program for cereal grain and grass hay production, and another 5,000–7,000 acres are farmed under a cooperative agreement between area farmers and the USFWS (Table 3.14-1) (USFWS 2010). The leasing and farming of the Tule Lake NWR and Lower Klamath NWR are governed by the Kuchel Act, which was signed into law in 1964. The law provides that Tule Lake NWR and Lower Klamath NWR would be set aside for wildlife habitat and leasing for agricultural use. Only 25 percent of the total land may be planted for row crops. The counties that contain the refuges are intended to receive

approximately 25 percent of the net revenues collected during each fiscal year from the leasing of the Federal lands in Reclamation's Klamath Project. This revenue is paid annually to the counties that contain the refuges (Klamath, Siskiyou, and Modoc) in lieu of property tax.

The Kuchel Act also mandates that 13,000 acres of surface water area be maintained in Sumps 1A and 1B (Figure 3.14-2), areas in the refuges that are used to collect agricultural runoff and provide habitat for migrating waterfowl (Personal Communication, Mike Green, March 23, 2011). In 1976, Congress amended the National Wildlife Refuge System Administration Act of 1966 and provided primary management responsibility to the USFWS. Following the passage of the amendment, Reclamation and the USFWS formed a cooperative agreement on the management of the public lease land. Essentially, Reclamation administers the agricultural leases on the refuge land and the USFWS manages wildlife and habitat, such as the water areas, buffer strips, wildlife use areas, and share crop land (Personal Communication, Mike Green, March 23, 2011).

Table 3.14-1. Kuchel Act Lands in Reclamation's Klamath Project, 2009

State	County	Refuge Area	Agricultural Acres	Marsh Acres	Total Acres
California	Modoc	Tule Lake	4,557	2,640.80	**7197.8**
		Lower Klamath	NA	NA	
	Siskiyou	Tule Lake	12,283.60	12,090.80	**24,374.40**
		Lower Klamath	9,529.70	28,664.50	**38,194.20**
Total Kuchel Acres, California			26,370.3	43,396.10	**69,766.40**
Oregon	Klamath	Lower Klamath	Not Provided	Not Provided	**6365.9**
Total Acreage subject to Kuchel Act					**76,132.3**

Source: Reclamation's Payment to Counties In-Lieu-of-Taxes Report. DOI 2010a.

3.14.1.5 Land Ownership

The area at or near the Four Facilities includes lands owned by PacifiCorp, private owners, and managed by BLM, the State of Oregon, and Klamath County. USFS also manages several parcels outside the Klamath Hydroelectric Project (KHP) boundary near Copco 1 Reservoir.

PacifiCorp Lands

PacifiCorp owns approximately 11,000 acres in Klamath County and Siskiyou County that are not directly associated with its Klamath hydroelectric facilities, and that are generally not included within the existing FERC project boundary. The KHSA describes this property as Parcel A (see Figures 3.14-3 through 3.14-7). Implementation of the KHSA would have no effect on disposition of Parcel A lands, which would be disposed of by PacifiCorp subject to applicable Public Utility Commission approval requirements (KHSA Section 7.6).

PacifiCorp also owns approximately 8,000 acres in Klamath County and Siskiyou County that are associated with the KHP and/or included within the FERC project boundary. The

KHSA describes this property as Parcel B lands (see Figures 3.14-3 through 3.14-7). Of these lands, approximately 2,000 acres are currently inundated by the reservoirs.

According to the KHSA (Section 7.6.4), Parcel B lands would be transferred to the respective states (Oregon or California) or a designated third party, before facility removal. Lands owned by the state and federal government would not be subject to local zoning laws and regulations. The transferred lands would be managed for public interest purposes such as fish and wildlife habitat restoration and enhancement, public education, and public recreational access. The KHSA provides an option that would invoke the "meet and confer" provisions to allow for other uses. The states have no detailed plans but indicate that the approximately 2,000 acres of inundated lands would be restored to natural conditions consistent with the intent of improving fisheries in the Klamath system. PacifiCorp also owns electric transmission and distribution facilities, which will remain under its ownership (KHSA Section 7.6.1), and are not analyzed further in the EIS/EIR.

The land around the Keno Development would be transferred from PacifiCorp to the United States to be managed by DOI based on terms agreed to by both parties (KHSA Section 7.5). For purposes of this analysis, the transfer agreement was assumed to be complete by March 31, 2012, which is the target date for reaching an agreement (KHSA Section 7.5.2).

In addition to the above categories of lands, the KHSA identifies three parcels (East Side/West Side generating facilities lands) that may be transferred to DOI, near Klamath Falls, Oregon upon decommissioning (KHSA Section 6.4.1.C).

Ownership at or near the Four Facilities

Land ownership at or near the Four Facilities (Figures 3.14-3 through 3.14-7) is as follows:

- Keno Dam
  - The shoreline of Keno Impoundment is primarily in private ownership, with some federal (managed by DOI) and state (Oregon) ownership, while the area near the dam is owned by PacifiCorp. The State of Oregon title extends upriver to approximately river mile 233 and includes the bed and banks of the river channel under Keno Dam and Keno Impoundment.
  - PacifiCorp and private entities own the lands along the Klamath River in the Keno Reach.

- J.C. Boyle Dam
  - PacifiCorp owns most of the land at J.C. Boyle Reservoir concentrated along the reservoir and at the dam. The FERC boundary encompasses a few acres of private property and large tracts of public and Oregon and California Railroad (O&C) land managed by the BLM including Topsy Campground and much of the land along the access road, power canal, tunnel, and bypass reach. The FERC boundary also encompasses state-owned land. The title of the State of

Oregon extends upriver and includes the beds and banks of the river channel located under J.C. Boyle Dam and J.C. Boyle Reservoir.
  - Most of the land along the J.C. Boyle peaking reach of the Klamath River is public and O&C land managed by the BLM. It also includes some PacifiCorp and other private property. A small amount of National Forest land managed by the Klamath National Forest lies near the Klamath Hydroelectric Project.

- Copco 1 & 2 Dams
  - PacifiCorp owns the lands around the powerhouses, dams, and Copco 2 Reservoir, while most of the land surrounding Copco 1 Reservoir is privately owned. The BLM also manages some public land near Copco 1 Reservoir and Copco 2 Dam.

- Iron Gate Dam
  - PacifiCorp owns the land adjacent to the Iron Gate Dam, Fish Hatchery, and Powerhouse, as well as most of the land along the Iron Gate Reservoir shoreline and the nearby transmission line right-of-way. The Iron Gate Dam vicinity also includes a small amount of private land.

Downstream of Iron Gate

The Klamath River passes through federally designated wilderness, National Forests, public land managed by the BLM, undeveloped private lands and rural tribal reservations for most of its course downstream of Iron Gate Dam. There are no incorporated cities or large developed areas in the watershed downstream of Klamath Falls. Within a one-quarter mile buffer of the Klamath River downstream from Iron Gate Dam to the Estuary, there are approximately 40,500 acres of open space and public lands, 15,600 acres of agricultural lands, 290 acres of residential uses (of various densities), 24 acres of tribal reservation lands, 2,478 acres of urban reserve, and 26 acres of commercial use. In addition, the entire Klamath River is designated a wild and scenic river downstream of Iron Gate.

3.14.2 Regulatory Framework

Land use resources within the area of analysis are regulated by several federal, state, and local laws and policies, which are listed below.

3.14.2.1 Federal Authorities and Regulations

- Federal Land Policy and Management Act of 1976
- Oregon and California Revested Railroad Grant Lands Act of 1937
- Oregon Public Lands Transfer and Protection Act of 1998
- BLM Redding Resource Management Plan and Record of Decision (1993)
- BLM Klamath Falls Resource Area Resource Management Plan and Record of Decision and Rangeland Program Summary (1995a)
- BLM Medford District Resource Management Plan and Record of Decision (2008)
- Northwest Forest Plan (1994)

- Fremont National Forest Land and Resource Management Plan (1989)
- Winema National Forest Land and Resource Management Plans (1990)
- Six Rivers National Forest Land Management Plan (1995b)
- Kuchel Act of 1964
- Klamath Basin Compact of 1956
- Tribal Forest Protection Act of 2004
- National Wildlife Refuge System Administration Act of 1966

3.14.2.2 State Authorities and Regulations

- California Land Conservation Act of 1965 (Williamson Act)
- California's Farmland Mapping and Monitoring Program
- California Forest Practice Rules
- Oregon Exclusive Farm Use zoning program
- Oregon Forest zoning program
- Oregon Forest Practices Act

3.14.2.3 Local Authorities and Regulations

- Klamath Reservation Forest Management Plan (2008)
- Klamath County Land Use Code
- Klamath County Comprehensive Plan (2010b)
- Siskiyou County Land Development Code
- Siskiyou County General Plan (1980)
- Siskiyou County General Plan Land Use Policies (1997)
- Siskiyou County zoning ordinance
- Modoc County General Plan (1988)
- Modoc County zoning ordinance
- City of Yreka General Plan (2003)
- City of Yreka municipal code

3.14.3 Existing Conditions/Affected Environment

3.14.3.1 Land Use

Land Use Categories

Major land use categories in the area of analysis are agriculture, open space, forestry, recreation, and rural communities (see Figures 3.14-3 through 3.14-7). The main urban areas are Klamath Falls and the City of Yreka. Most of the land in the area of analysis is devoted either to agriculture/grazing or to open space and conservation. A small portion is devoted to hydroelectric operations and recreation sites. Residential developments occur in and around the community of Keno and the Keno Recreation Area, and along portions of Copco 1 Reservoir.

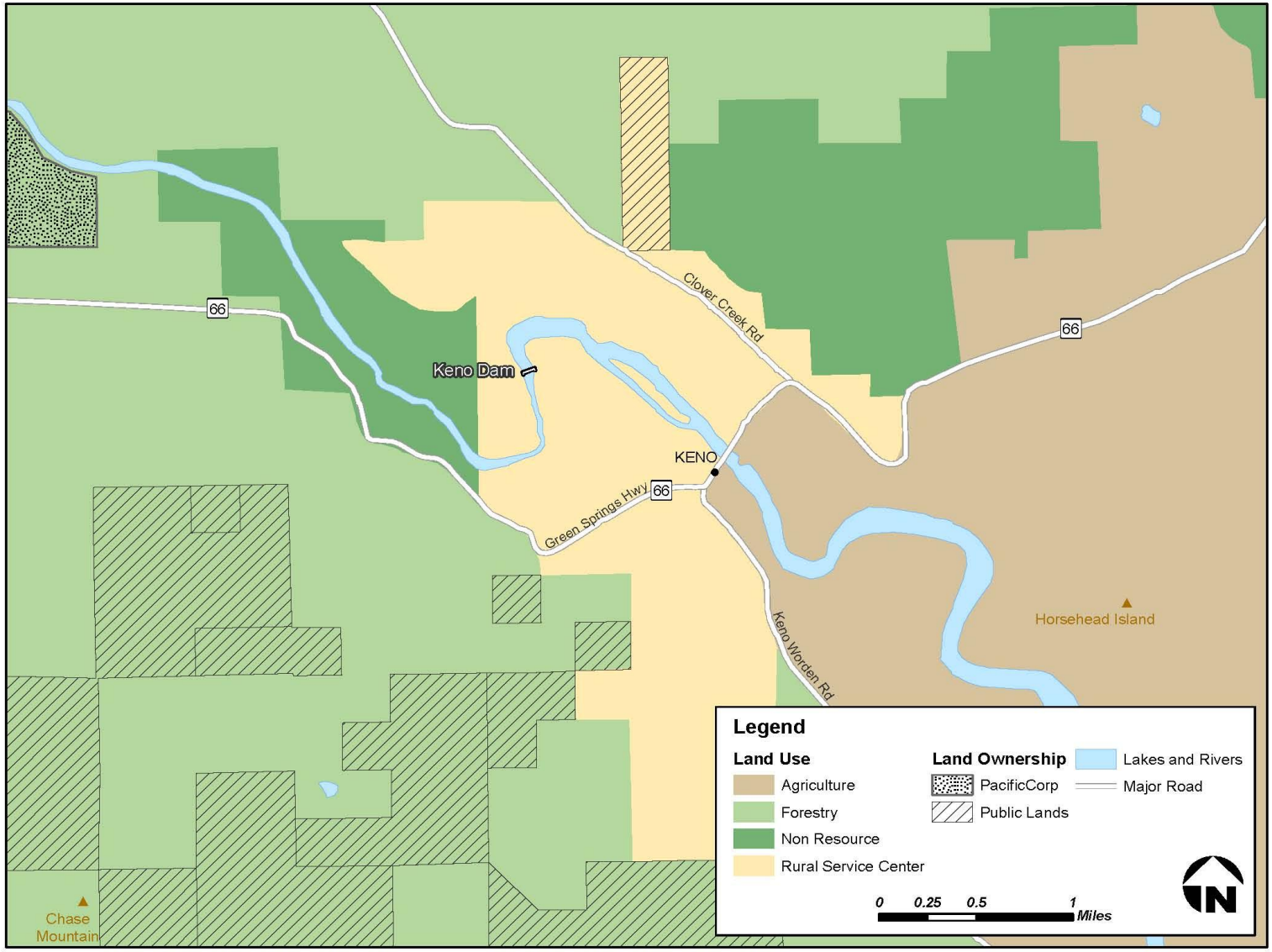

Figure 3.14-3. Land Use – Keno Dam

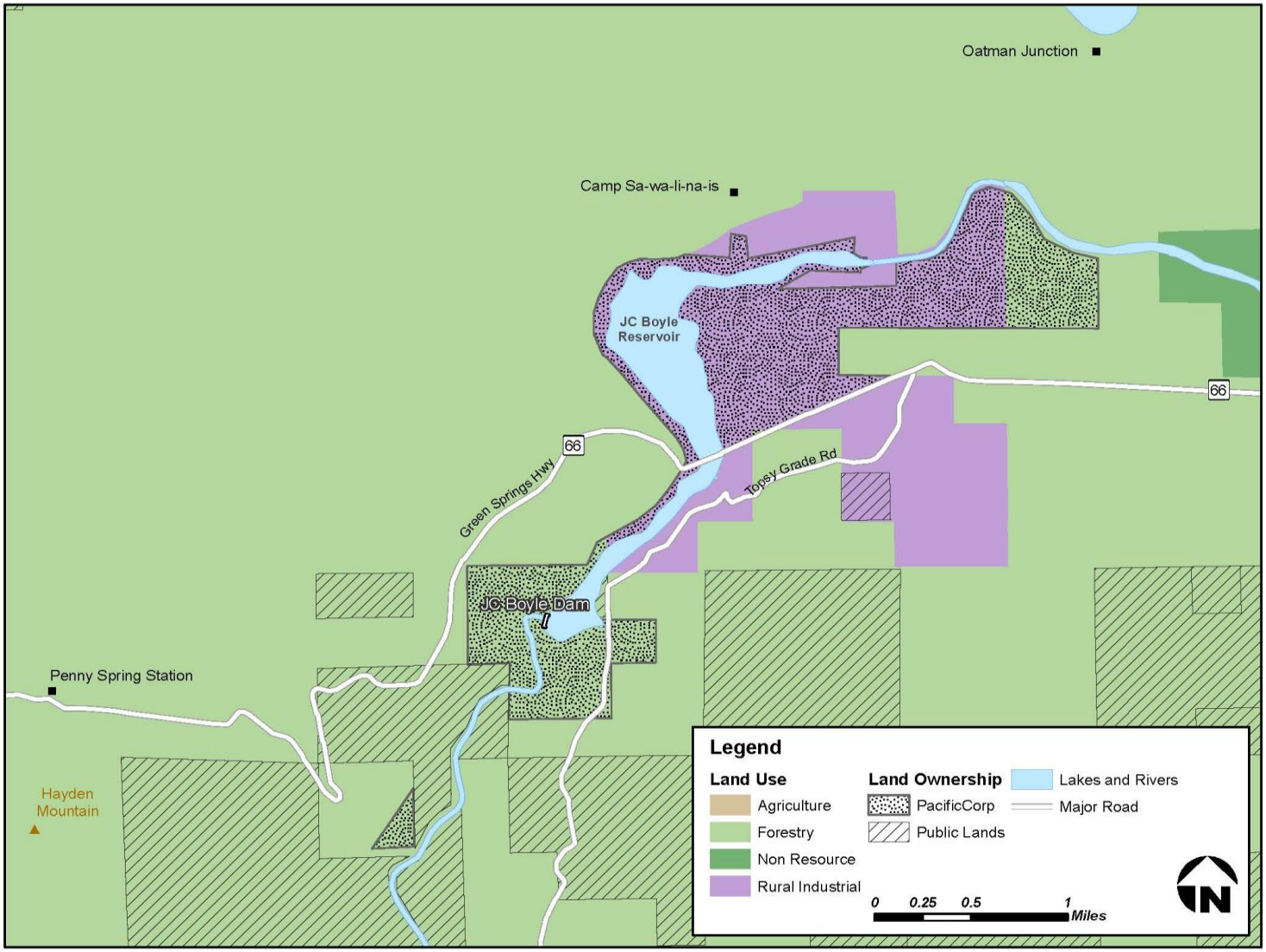

Figure 3.14-4. Land Use – J.C. Boyle Dam

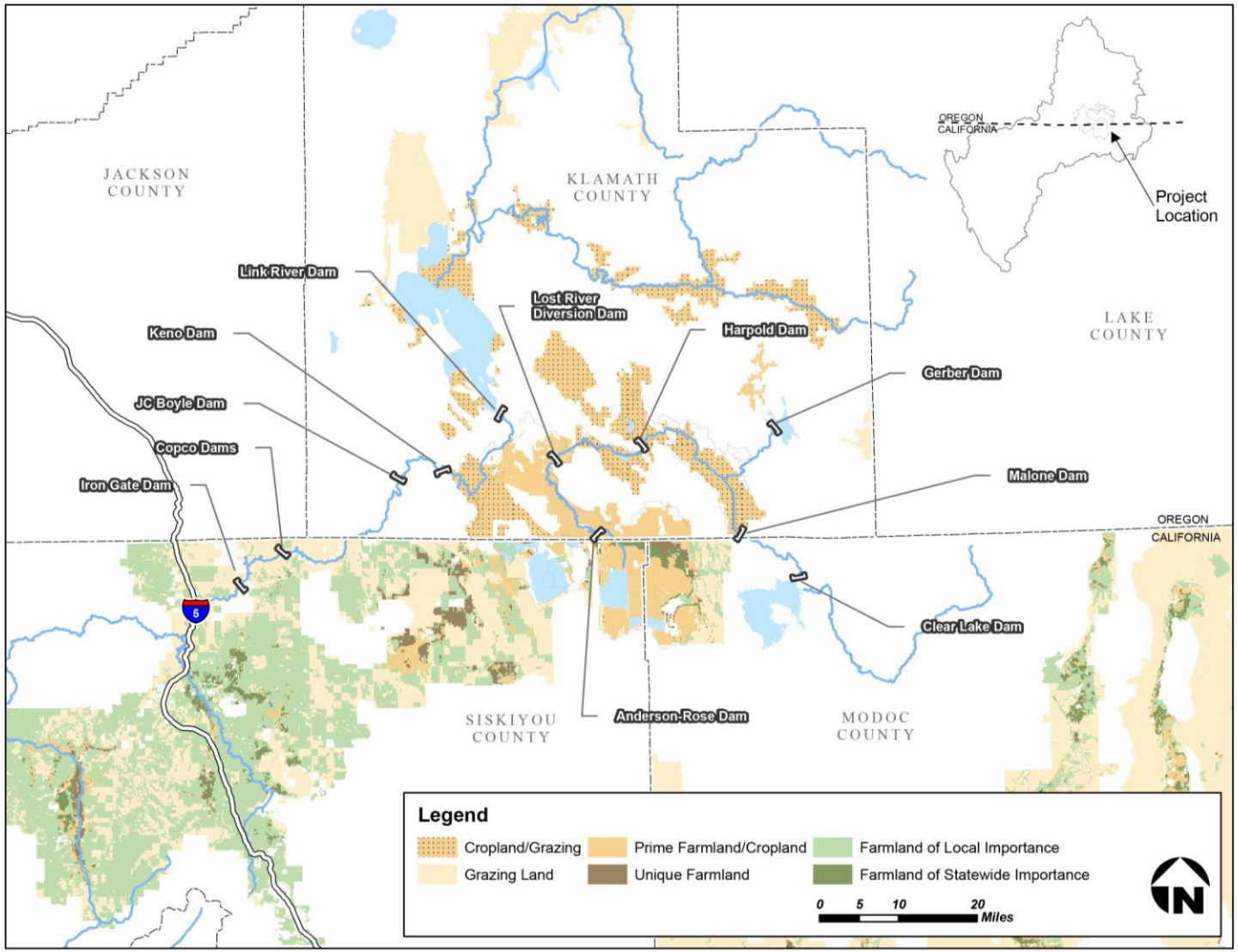

Figure 3.14-5. Upper Klamath Basin Agricultural Resources

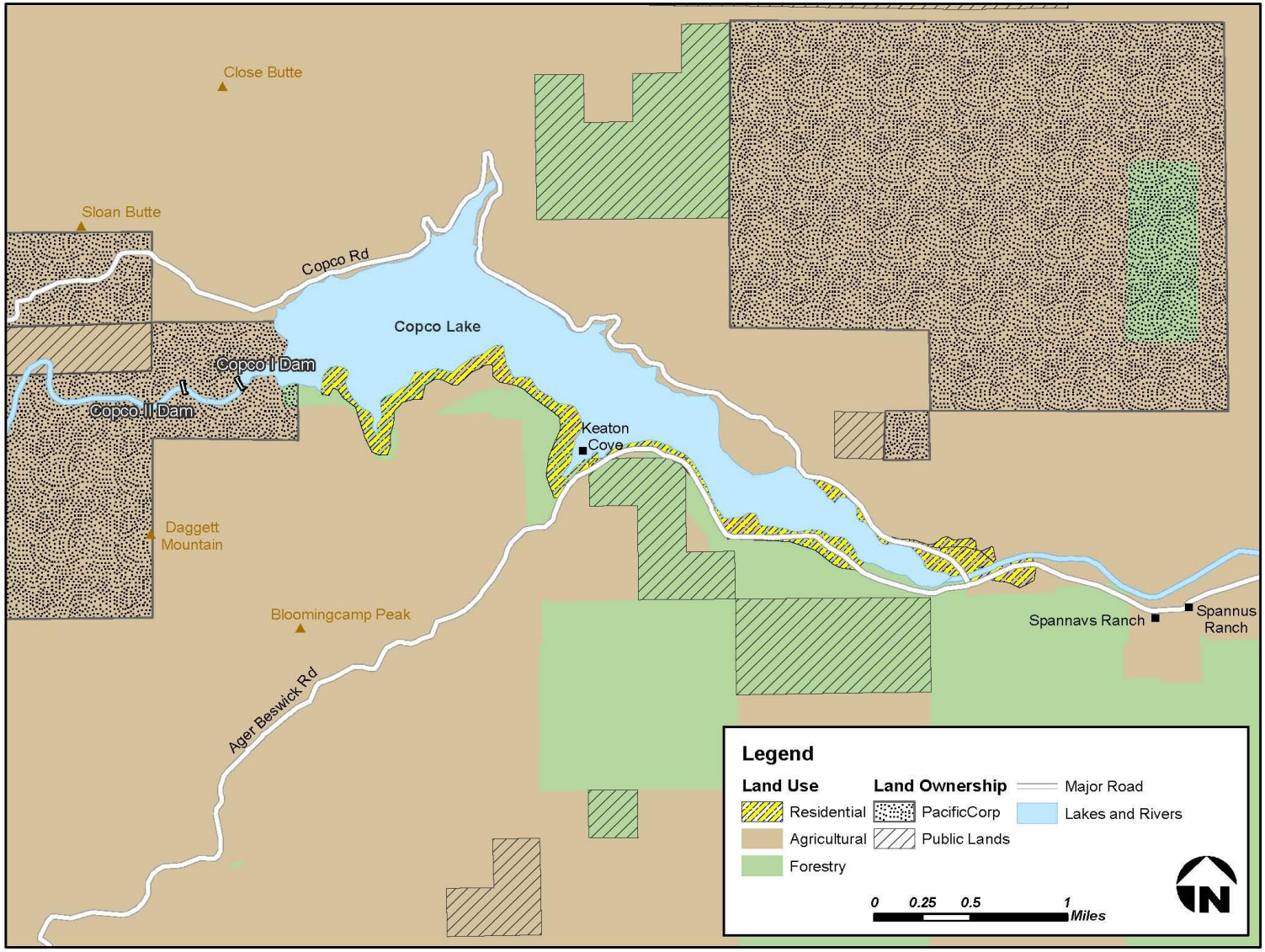

Figure 3.14-6. Land Use – Copco 1 and Copco 2 Dams

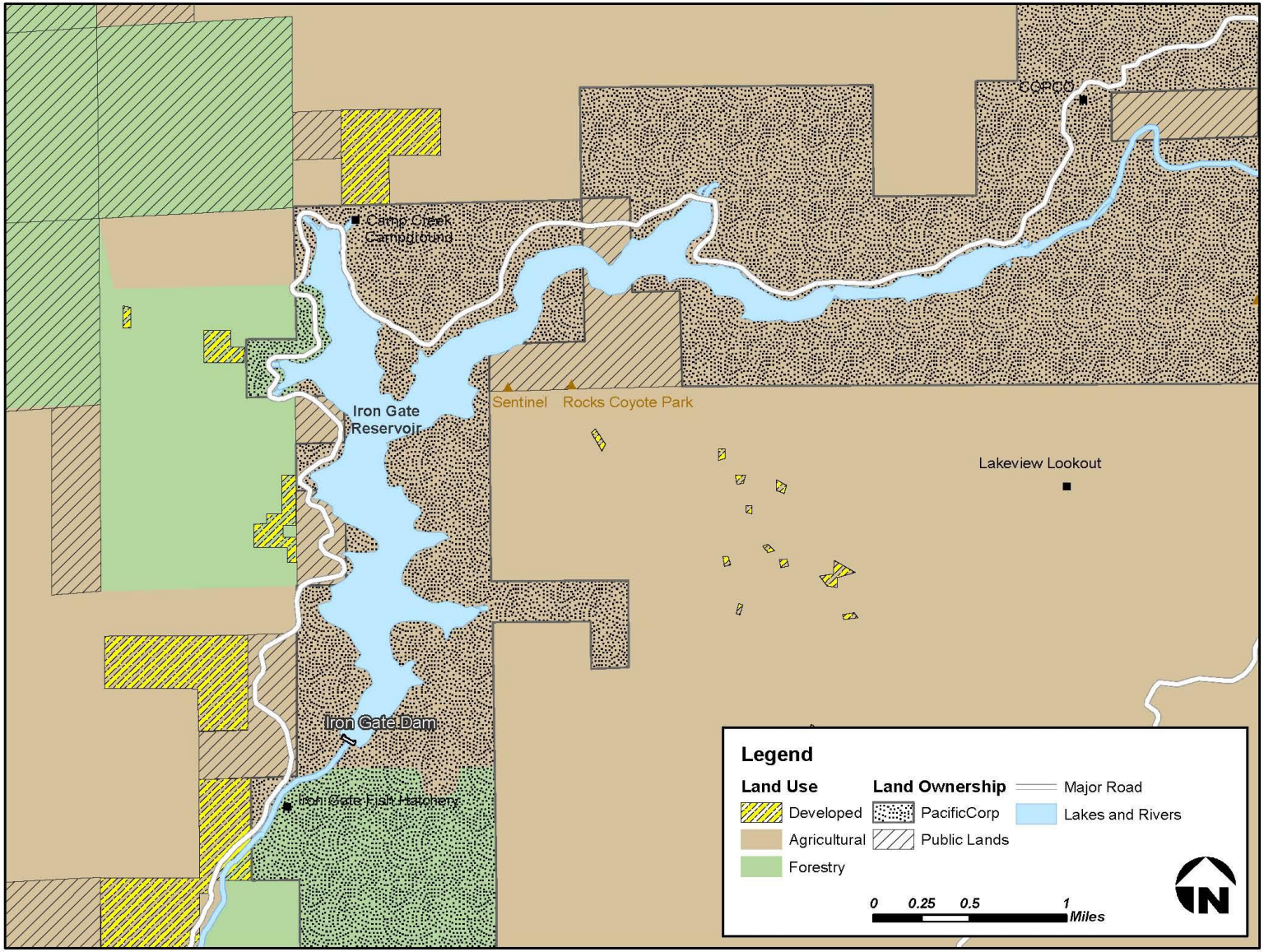

Figure 3.14-7. Land Use – Iron Gate Dam

Inundated Lands

In Klamath County, lands currently inundated by J.C. Boyle Reservoir do not have land use designations or zoning, and would require a zoning change and plan amendment after the land is no longer inundated (Gallagher 2011). Lands currently inundated by the reservoirs in Siskiyou County have land use designations and zoning that correspond with the adjacent lands (generally agriculture). After the Proposed Action is complete, they would not require new land use designations or zoning because they run with the land and do not change with an ownership change until there is some action that triggers rezoning and land use amendment (Plucker 2011).

Open Space/Recreation/Public Lands

Federal and state agencies own and/or manage public lands in the area of analysis. These include public and O&C lands owned by the United States and managed by BLM, National Forests and Grasslands owned by the United States and managed by USFS, wildlife refuges owned by the United States and managed by USFWS, and other publicly-accessible reservoirs and state lands. These areas are used for public recreation and open space, as well as forest and mineral resources. Additionally, DOI manages lands near the Keno Dam that are operated by PacifiCorp for public recreation. Other privately-owned recreation facilities (e.g., Recreational Vehicle parks) operate along the Klamath River downstream of Iron Gate Dam.

Residential

In the area of analysis, there are residential developments in the city of Klamath Falls, in and around the community of Keno and the Keno Recreation Area, and along portions of Copco reservoir. These developments are mostly low-density rural residential (e.g., fewer than four units per acre).

Commercial/Industrial

Besides the dam facilities themselves (zoned industrial), industrial/undeveloped and urban uses occur in the City of Klamath Falls near the East Side and West Side powerhouse developments. In addition, the Klamath Falls co-generation plant, the Collins Products lumber facility, and Jeld-Wen millwork plant are located outside city limits adjacent to Klamath River.

Rural Service Center

Rural service centers are unincorporated areas that contain local commercial services to meet the needs of rural residents. These include general stores, limited commercial tourist oriented operations such as accommodations and restaurants, and campgrounds. These areas are located in the areas near the Keno Impoundment and Lake Ewauna.

Forest/Timber lands

About 58,054 acres is designated forestry in the area of analysis as shown in Figures 3.14-3, 3.14-4, 3.14-6, and 3.14-7. These lands are owned by the United States and managed by the USFS, BLM, and private landowners for the purposes of timber harvests and other forest management practices.

Agriculture

Agriculture is an important part of the economy for Klamath, Siskiyou, and Modoc counties. Hay, alfalfa, vegetables, nursery crops, livestock, and various grains are all grown in the three-county area that receives water from Reclamation's Klamath Project in the Upper Klamath Basin. The Agricultural Commissions of each California county prepare crop reports that focus on production at the county level, and Reclamation provides annual crop reports for Reclamation's Klamath Project. According to the California Water Plan's 2009 update, 55 percent of the Reclamation's Klamath Project is in Oregon, and the remaining 45 percent is in California (see Figure 3.14-5). There are no Williamson Act lands adjacent to the Four Facilities although there are Williamson Act lands in the Upper Klamath River Sub-basin. Most Williamson Act lands in the Lower Klamath Basin are in Shasta River Sub-basin and Scott River Sub-basin. In the Upper Klamath Basin, there are Williamson Act lands in the Butte and Lost River Sub-basins (see Figure 3.14-8, Williamson Act Lands in Project Vicinity).

Reclamation's Klamath Project provides water to agricultural lands and wetlands in the upper Klamath River and Lost River Sub-basins. A large percentage of the 35,000 wetland acres are in California, increasing the percentage of the project in California when included in the project total. Of the total land area in the Reclamation's Klamath Project, 45 percent are in California and 55 percent are in Oregon; however, only 34 percent of the agricultural land within the Reclamation's Klamath Project is located in California and 66 percent in Oregon (Personal Communication, Mike Green, March 23, 2011).

Table 3.14-2. 2009 Irrigable Lands in Reclamation's Klamath Project by State

State	Acres Irrigated	Fallow or Idle	Total Irrigable
California	65,321.30	6,313.80	71,635.10
Oregon	124,951.80	28,378	153,329.80
Total	190,273.10	34,691.80	224,964.90

Source: Reclamation's Klamath Project 2009 Crop Report. DOI 2010b

Water is captured in the Clear Lake and Gerber Reservoirs and the Lost River for the Lost River or Eastside portion of Reclamation's Klamath Project and in Upper Klamath Lake and the Klamath River for the Klamath or Westside portion of the project (see Figure 3.14-2). The drainage area of the entire project is approximately 5,700 square miles (DOI 2009b). See Chapter 1.2.4 for additional detail regarding Reclamation's Klamath Project.

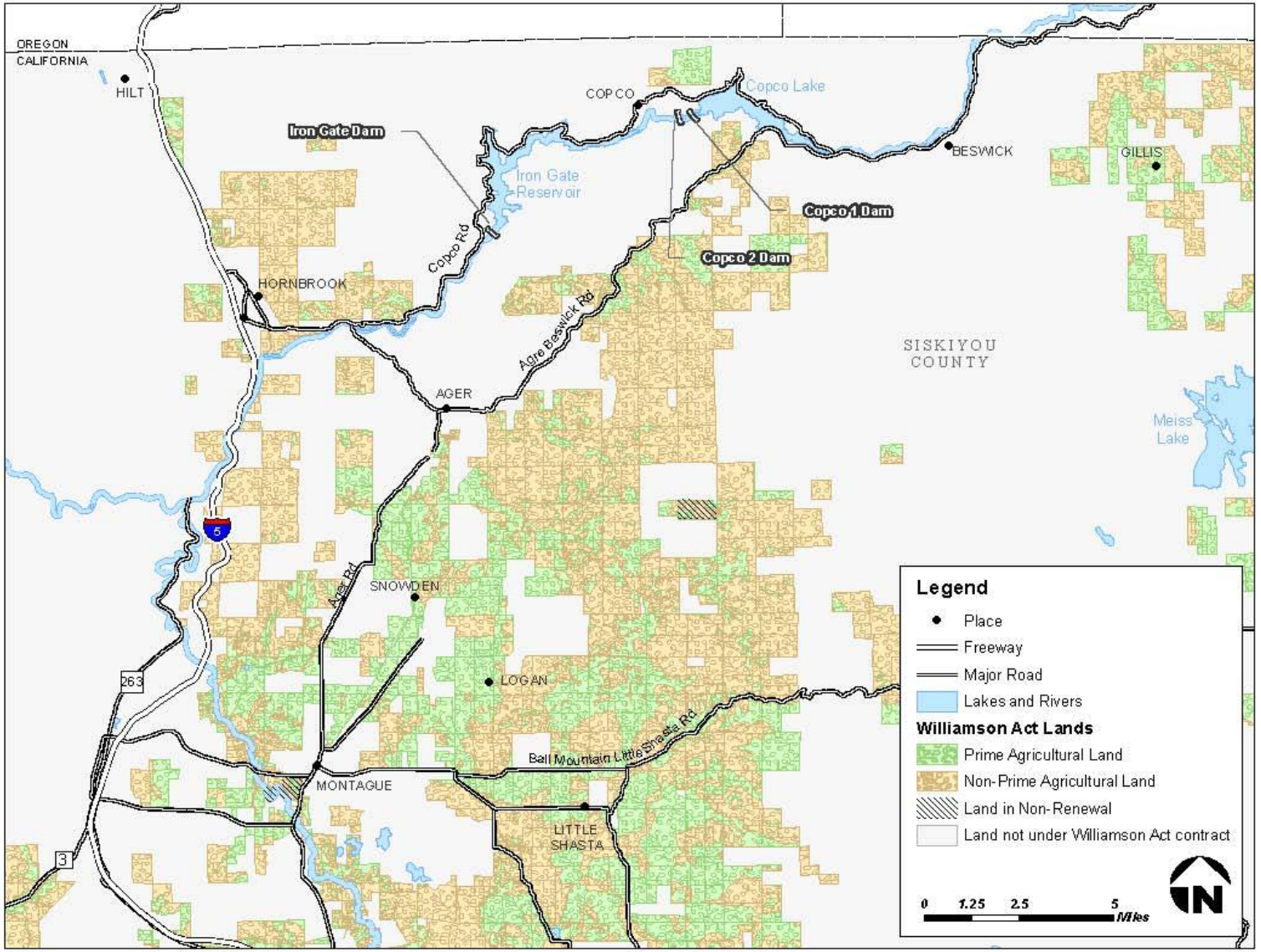

Figure 3.14-8. Williamson Act Lands in the Project Area

Klamath County

Agricultural land in Klamath County totals 464,689 acres, while total acreage in Klamath County within the Reclamation's Klamath Project boundaries is 127,406 (Table 3.14-3). As shown in Figure 3.14-5, much of Klamath County's agriculture land in the area of analysis is zoned Exclusive Farming Use (Oregon Zoning (computer file) Oregon State Service Center for GIS, 1998). The agricultural designations in Table 3.14-3 are Klamath County's zoning classes.

Table 3.14-3. Klamath County Agricultural Land

	County Lands	Reclamation's Klamath Project
Cropland	76,208	62,937
Cropland/Grazing	249,662	64,469
Grazing	138,819	0
Klamath County Totals	**464,689**	**127,406**

Source: Federal Water Districts – Mid-Pacific Region [computer file]. Sacramento, CA: U.S. Bureau of Reclamation and MPGIS Service Center, 2009.(DOI 2009c)

Oregon Generalized Zoning [computer file]. Salem, OR: State Service Center for GIS, 1998

Upper Klamath Lake is a major source of water through Reclamation's Klamath Project to the farmland in Klamath County as well as Siskiyou and Modoc Counties.

Siskiyou and Modoc Counties

The farmland in Siskiyou and Modoc Counties is a combination of Prime Farmland, Farmland of Statewide Importance, and other classifications recognized by the State Department of Conservation (see Figure 3.14-5) (California Department of Conservation (CDC) 2010). Much of the Siskiyou County farmland is outside of the area of analysis, in the Scott River and Shasta River Sub-basins. These areas do not receive water from Reclamation's Klamath Project, and would not be affected by changes in water allocation associated with the Proposed Action. Reclamation's Klamath Project does serve lands in the Upper Klamath Basin within Siskiyou and Modoc Counties (Table 3.14-4).

Lands Downstream of Iron Gate Dam Subject to Flooding

The lands along the Klamath River are subject to flooding. These include agriculture and grazing lands, recreation sites and unincorporated communities along the Klamath River. Flooding risk is discussed in Appendix J for a portion of the Klamath River downstream of Iron Gate Dam to Happy Camp. Effects are included in Section 3.6, Flood Hydrology.

Table 3.14-4. Acres of Agricultural Land in Siskiyou and Modoc Counties

Agriculture/Land Use	County		Reclamation's Klamath Project Area	
	Siskiyou	***Modoc***	***Siskiyou***	***Modoc***
Grazing Land	393,892	814,860	9,181	1,278
Prime Farmland	77,209	79,251	34,707	30,900
Unique Farmland	33,008	13,971	804	4,050
Farmland of Local Importance	616,670	148,177	4,480	2,480
Farmland of Statewide Importance	27,678	44,541	2,726	6,587
Total Agricultural Land	**1,148,457**	**1,100,800**	**51,898**	**45,296**

Source: GIS Calculations using Federal Water Districts – Mid-Pacific Region [computer file]. Sacramento, CA: Reclamation and MPGIS Service Center, 2009.(DOI 2009c)

3.14.3.2 Existing Infrastructure

Existing infrastructure potentially affected by the Proposed Action are the City of Yreka water line, existing domestic wells, recreation sites and facilities, and roads. Details of utilities and public services are found in Section 3.18, Public Health and Safety, Utilities and Public Services, Solid Waste and Power, and recreation facilities are described in Section 3.20, Recreation. The existing roads are owned by PacifiCorp, the federal government, counties or private entities; details of which can be found in Section 3.22, Traffic and Transportation.

3.14.4 Environmental Consequences

3.14.4.1 Effects Determination Methods

The Lead Agencies reviewed the plans, codes, regulations and ordinances listed in Section 3.14.2 to aid this analysis. Existing land uses were identified from a variety of sources including federal and state agencies and the respective counties. The effects analysis identified direct and indirect effects on land use, agricultural and forest resources under the No Action/No Project Alternative, the Proposed Action, and alternatives. The types of land use effects that were analyzed included temporary effects associated with dam removal, demolition, and staging and permanent effects such as transfers of ownership, changes in land use, and required changes to local land use plans and zoning ordinances. The Lead Agencies also considered possible conflicts or inconsistencies between the proposed alternatives and federal, state, regional, local, or tribal land use plans, policies, or controls relevant in the area of analysis. Temporary and permanent direct and indirect conversions of agricultural lands were also analyzed. In addition, the Lead Agencies examined the changes in land ownership, including the ownership and operation of Keno Dam. Section 3.20, Recreation, discusses roads and access to the new river channel, both for public access and for private owners adjacent to the reservoirs. The discussion below includes the effects on land use from new access roads for deconstruction activities. New roads that may be required to mitigate impacts on recreational facilities are discussed in the analysis of mitigation measures for other resource areas.

Changes in shoreline access are addressed in Section 3.20, Recreation, because they would not constitute a land use change. Effects on the property values of private lands adjacent to the reservoirs due to the loss of the reservoirs are addressed in Section 3.15, Socioeconomics, because the land use of those properties would not change.

This section includes an evaluation of potential conflicts between the existing and proposed land uses. Although conflicts with zoning or land use policies, in and of themselves, would not constitute a physical impact on the environment (California Environmental Quality Act (CEQA) Guidelines Section 15064(d)(1)), the act of decommissioning the dams would ultimately cause physical changes in the environment. Physical changes resulting from the Proposed Action and the various alternatives are addressed throughout this EIS/EIR. Where significant adverse environmental impacts would occur, this EIS/EIR offers mitigation measures for reducing the physical impacts on the environment that would be caused by the change in land use.

The No Action/No Project Alternative provides the baseline condition against which the alternatives were measured. In particular, under the No Action/No Project Alternative, allocations of water to the irrigators and KHP would continue as dictated under the existing agreements and the Biological Opinion's from the National Oceanic and Atmospheric Administration (NOAA) Fisheries Service and the USFWS.

3.14.4.2 Significance Criteria

For the purposes of this EIS/EIR, impacts would be significant if they would result in the following:

- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.
- Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, or Exclusive Farm Zone land as defined by the Oregon Revised Statutes, Chapter 308, to non-agricultural use.
- Conflict with existing zoning for agricultural use, or a Williamson Act contract.
- Conflict with existing zoning for, or cause rezoning of, forestland (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g)).
- Result in the loss of forestland or conversion of forestland to non-forest use.
- Involve other changes in the existing environment that could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use.

3.14.4.3 Effects Determinations by Alternative

Alternative 1: No Action/No Project

Under the No Action/No Project Alternative, neither the KHSA nor the KBRA would be fully implemented. Under this alternative, resource management actions and restoration activities that are part of the KBRA and that are currently approved and on-going would continue to be implemented.

The No Action/No Project Alternative could conflict with applicable land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect. The No Action/No Project Alternative would not conflict with applicable plans, policies or regulations because no action would not result in any changes or actions that would conflict with land use, agriculture, or forest plans, policies, or regulations. **There would be no change from existing conditions to land use and agriculture from the No Action/No Project Alternative.**

The No Action/No Project Alternative could result in the conversion of farmland to non-agricultural use or conflict with Williamson Act land or agricultural zoning. No land uses would be converted directly as a result of the No Action/No Project Alternative. Under the No Action/No Project Alternative, there would be continued uncertainty for irrigators dependent on Reclamation's Klamath Project water because of allocation methods required under the Biological Opinions which make it difficult for farmers to plan for the next season. The 2001 Klamath Project Operations Plan that curtailed deliveries to project irrigators due to low water conditions and the flow requirements of the Biological Opinion's indicates potential future water allocations under the No Action/No Project Alternative. Continuing this uncertainty could indirectly result in local farmers retiring farmland to reduce their dependence on Reclamation's Klamath Project water, potentially by selling agricultural property for development or other non-agricultural uses. There has also been a proliferation of groundwater wells by farmers seeking an alternative water source, which may have impacts to local groundwater levels if the trend continues (see Section 3.7, Groundwater, for more details on the groundwater basin). Irrigators would continue to respond to uncertain water allocations under the No Action/No Project Alternative. **There would be no change from existing conditions to land use and agriculture from the No Action/No Project Alternative.**

The No Action/No Project Alternative could result in the conversion of forest lands to non-forest use or conflict with forest zoning. The No Action/No Project Alternative would not directly cause conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production. **There would be no change from existing conditions in forest lands from the No Action/No Project Alternative.**

The No Action/No Project Alternative could indirectly convert farmland, to non-agricultural use or forest land to non-forest use. The No Action/No Project Alternative would not include making changes in forest land use and would not involve other changes in the existing environment which, due to their location or nature, would result in conversion of farmland to non-agricultural use or forest land to non-forest use. **There would be no change from existing conditions to farmland or forest land uses from the No Action/No Project.**

Under the No Action/No Project Alternative, ongoing restoration actions would continue to be implemented and could affect land use, agriculture, and forest resources. These actions include the Agency Lake and Barnes Ranches Project, and ongoing fisheries restoration actions. Reclamation purchased the Agency Lake and Barnes Ranches adjacent to Agency Lake in 1998 and is currently using portions of the ranches as pumped storage. These ranches have been transferred to the USFWS and are now part of the Upper Klamath NWR. USFWS is studying the possibility of breaching the dikes which would convert the 63,770 acre-feet of storage from pumped storage to passive storage in Upper Klamath Lake. The Agency Lake/Barnes Ranches Project would go through separate National Environmental Policy Act evaluations as plans are developed for future restoration activities. **Future changes would not substantively change the existing land uses or areas used for agriculture, and do not affect forest lands, and therefore, there would be no change from existing conditions.**

Alternative 2: Full Removal of Four Dams (the Proposed Action)

Implementation of the KHSA would include full removal of the Four Facilities, drawdown and removal of the associated reservoirs, and restoration of formerly inundated lands in the project area.

The Proposed Action could conflict with applicable land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect. The Proposed Action would have no effect on the disposition of Parcel A lands. Activities defined in the Proposed Action would change current uses of the Parcel B lands in the vicinity of J.C. Boyle Dam from rural industrial to non-resource. Activities defined in the Proposed Action would not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect. The plans and policies described in Section 3.14.2 would not be affected by the Proposed Action, because the inundated lands in Siskiyou County already have zoning and land use designations that would not change once they are no longer inundated (Plucker 2011). In Klamath County, formerly inundated lands would require new land use designations and zoning, the designation of which would likely not conflict with any adopted plans or policies (Gallagher 2011). Private lands adjacent to the reservoirs would not have a land use change; however, those lands would no longer be adjacent to inundated land with reservoir views and that is currently used for water-based recreational purposes. In the future other land-based recreational uses could occur on the publicly owned property. Although the land use designations and zoning would not change *per se*, the functional

use of the area would change and would be noticeable to the private property owners. **The Proposed Action would not conflict with land use plans, policies or regulations adopted for the purpose of avoiding or mitigating an environmental effect.**

The Proposed Action could result in the conversion of farmland to non-agricultural use or conflict with Williamson Act land or agricultural zoning. Implementation of the Proposed Action would not involve directly converting farmland to non-agricultural uses, and would not conflict with existing zoning or Williamson Act contracts. There would be no changes in land use under the Proposed Action that would conflict with forest use or zoning. Certain programs of the KBRA may indirectly affect agricultural lands in the Reclamation's Klamath Project. These programs are discussed below in the KBRA section. **The Proposed Action would not result in the conversion of farmland to non-agriculture use, nor would it conflict with Williamson Act land or agricultural zoning.**

The Proposed Action could result in the conversion of forest lands to non forest use or conflict with forest zoning. Implementation of the Proposed Action would not affect the forest lands or forest uses surrounding the reservoirs or in the larger area of analysis. **There would be no change from existing conditions as a result of the Proposed Action.**

The Proposed Action could impact the existing environment resulting in changes that could result in conversion of farmland to non agricultural use or conversion of forest land to non forest use. Dam decommissioning and removal would require the creation of temporary roads, staging areas and construction sites. Although existing roads provide access to the KHP facilities, new roads would be needed during deconstruction activities. Temporary construction roads and staging sites would also be required during dam removal activity (see Chapter 2). Permanent disposal sites would be needed near the dams on lands currently designated open space and/or conservation. Site access for restoration activities would require construction of temporary gravel access roads and storage pads. Because these temporary roads would be built on lands designated for industrial (dam) or open space use or on currently inundated lands, and could be returned to their original or alternate use following deconstruction, construction of the roads would not conflict with applicable plans and policies or otherwise cause a significant land use impact. The need for new roads and the capacity and use of existing roads is addressed in Section 3.22, Traffic and Transportation. **The development of temporary roads and staging/construction sites would be a less than significant land use impact.**

New, permanent roads constructed to provide access to recreation areas could constitute a change in the existing environment. Permanent roads associated with achieving public access to the river would be addressed as part of the recreation plan (mitigation measure REC-1). However, those roads would be constructed on formerly inundated lands and would not constitute a significant land use impact because they would not take agricultural or forest lands out of production. **The development of permanent roads for public access would be a less than significant land use impact.**

The Yreka water supply pipeline, currently under the Iron Gate Reservoir, would need to be relocated to avoid damage after the reservoir is removed, creating a change in the existing environment and surrounding environment. The Proposed Action would require the relocation, replacement, and/or burial of the existing 24-inch diameter water line and transmission facilities from the City of Yreka's Fall Creek diversion (KHSA Section 7.2.3). The Proposed Action calls for placing the City of Yreka's waterline on a pipe bridge across the river. This would require construction of footings and other infrastructure to support the pipe bridge, resulting in construction at the site. However, a structure for the purpose of water conveyance would not constitute a land use change and would not conflict with applicable regulations and codes, because the contractor would be required to obtain all building permits prior to construction. Impacts on visual resources from a pipe bridge are addressed in Section 3.19, Scenic Quality.

Another option under consideration is to place the pipeline along the Lakeview Bridge at Iron Gate Dam rather than creating a new span for the pipeline. The pipe would be relocated from its current route and cross the river along the underside of the bridge. Surveys are still required to determine if the bridge is adequate to support the pipeline and the construction traffic from the decommissioning activities. A detailed discussion of the traffic impacts and road conditions concerns is provided in Section 3.22, Traffic and Transportation, and Mitigation Measure TR-1 addresses these concerns. Therefore, the Proposed Action would not conflict with policies or regulations within the City of Yreka. **There would be no change from existing conditions as a result of the Proposed Action and pipeline relocation.**

Under the Proposed Action, removal of recreational facilities currently located on the banks of the existing reservoirs could change land use classification. The existing recreational facilities provide camping and boating access for recreational users of the reservoirs. Once the reservoirs are drawn down, these facilities would be removed, an action that would not result in a change of forest land uses or convert forest lands to other uses. **There would be no change from existing conditions resulting from the removal of the recreational facilities.**

Keno Transfer

The transfer of ownership of Keno Dam from PacifiCorp to Reclamation could result in a change in land use. The Keno Transfer would not change the use or operation of the Keno Dam or the Keno Impoundment, nor directly result in a change of land use in the surrounding area. **There would be no change from existing conditions as a result of the Keno Transfer.**

East and West Side Facilities

The decommissioning of the East and West Side facilities could impact land use. Decommissioning of the East and West Side canals and hydropower facilities of the Link River Dam by PacifiCorp as a part of the KHSA would redirect water flows currently diverted at Link River Dam into the two canals, back into Link River. Although the land used for hydropower would no longer be used for that purpose, the decommissioning would not directly change the current land use of the canal system. **Therefore, the**

decommissioning of these facilities would have no impact on land use, agriculture, or forest resources.

KBRA

The KBRA has several programs that could affect land uses within the Klamath Basin:

- Fisheries Reintroduction and Management Plan
- Water Diversion Limitations
- Water Use Retirement Program
- Power for Water Management
- Mazama Forest Project

Fisheries Reintroduction and Management Plan

Construction of fish handling facilities for trap and haul operations within the Fisheries Reintroduction and Management Plan could change land use. The Fisheries Reintroduction and Management Plan includes trap and haul operations that move fish around Keno Impoundment and Link River during times of poor water quality. Trap and haul operations would require construction of new fish handling facilities near Keno Dam and Link River Dam. Because these new facilities would be built on lands designated for industrial (dam) use, their construction would not conflict with applicable plans and policies or otherwise cause a significant land use impact. The potential land use conversions generated by development of trap and haul facilities would not be expected to contribute to any land use effects generated by the hydroelectric facility removal action analyzed above. **The development of new fish handling facilities would be a less than significant land use impact.**

Water Diversion Limitations

The implementation of the Water Diversion Limitations could convert farmland to non-agricultural uses, a potentially significant effect. The Water Diversion Limitations is part of the On-Project Water Users Program and would limit water diversions to specific irrigators receiving water on Reclamation's Klamath Project, and could decrease the total acreage under cultivation or indirectly convert farmland to non-agricultural use. The Water Diversion Limitations (KBRA 15.1 and 15.2) outlines water diversion limitations to specific diversions that are intended to increase water availability for fisheries purposes, especially in drier years. Agricultural water diversion limitations would be based on annual water level forecasts for Upper Klamath Lake which could result in less available water for irrigators during drought years and result in the conversion of farmland to non-agricultural uses. Also included are allocation and delivery guidelines for water provided to the Tule Lake NWR and Lower Klamath NWR for both wildlife and agricultural interests, which include the Tule Lake Irrigation District and the Klamath Drain District.

Activities in the Water Diversion Limitations that have the potential to impact agriculture in the region include:

- Creation of conservation easements, forbearance agreements, and/or land acquisitions intended to reduce water use for irrigation. This could result in land fallowing and/or a shift in crop types to dry land crops.

- Implementation of water use efficiency and conservation measures to reduce surface water use, including drip irrigation.

- Development of new groundwater sources, and the potential creation of new surface and groundwater storage areas.

Implementation would include the establishment of fixed, annual water diversion amounts to agricultural uses based on available water and forecast water levels in the Upper Klamath Lake. While the diversion could reduce the availability of irrigation water by up to 100,000 acre feet less than irrigators received in the past, these fixed volumes would provide a base level for agricultural diversions and establish an irrigation framework that would provide security and increased certainty for farmers, allowing them to make decisions about the year's crops and activities based on the water forecast. This security would mitigate the effects of the lower delivery amount that may be expected in dry years.

The activities in the Water Diversion Limitations have the potential to reduce the amount of agriculture occurring on Reclamation's Klamath Project. Implementation of the On-Project Water Use Program will maximize the use of available water supplies, improve water supplies for the National Wildlife Refuges, and increase reliability for agricultural users. The conversion of farmland to non-agricultural uses that could occur as a result of agricultural diversion limitations would be a significant impact. However many of the actions described in the KBRA are anticipated to be beneficial to the environment and thus likely to have beneficial effects. The Diversion Limitations will also provide a more reliable water supply to the NWRs, a beneficial effect. The potential land use conversions generated by activities in the Water Diversion Limitations would not be expected to contribute to any land use effects generated by the hydroelectric facility removal action analyzed above. **The Water Diversion Limitations would maximize the use of available water, increase reliability for irrigators, and benefit the long-term sustainability of agricultural practices in the Klamath Basin. Impacts are therefore expected to be less than significant and potentially beneficial in the long term.**

Water Use Retirement Program (WURP)
The WURP could result in the fallowing or conversion of agricultural land non agricultural uses, such as open space or wetland restoration areas.
The WURP is part of the Off-Project Water Program and is intended to resolve the existing disputes between the Off-Project Irrigators, The Klamath Tribes, and the Bureau of Indian Affairs, and increase the stream flow into Upper Klamath Lake. The

Off-Project Water Program applies to the Wood, Sprague, Sycan, and Williamson River sub-basins, all of which are upstream of Upper Klamath Lake and outside the boundaries of Reclamation's Klamath Project.

The increase of permanent inflow to Upper Klamath Lake would be accomplished through various methods outlined in the WURP. The program is intended to permanently retire 30,000 acre-feet of water rights from irrigators to permanently increase inflow to Upper Klamath Lake (KBRA Section 16.2.2). The description of the WURP program in the KBRA does not mandate how this 30,000 acre feet would be acquired, but it could include:

- Retirement of water rights and forbearance agreements
- Short-term water leasing and split season irrigation
- Upland management techniques, such as juniper removal and timber thinning
- Water efficiency measures and dry land cropping
- Natural storage improvements, such as wetlands or improved riparian areas.

While no part of KBRA implementation would directly convert agricultural land to other uses, the KBRA provisions discussed above could result in agricultural land being temporarily or permanently retired. However, the EIS/EIR cannot characterize the specific impact from the KBRA on the conversion of farmland to non-agricultural use as a result of these programs because the number of voluntary participants, acres of farmland, and the final use of the lands affected by the program is unknown. The KBRA programs would protect the sustainability of agricultural uses and communities by improving the reliability of the agricultural water supply and settling long standing disputes on the amount, timing, and other conditions of water diversion and delivery for agriculture. The potential land use conversions generated by activities in the WURP would not be expected to contribute to any land use effects generated by the hydroelectric facility removal action. The KBRA could result in the conversion of farmland to non-agricultural use or conflict with Williamson Act land or agricultural zoning, a potentially significant impact. **However, the other potential measures outlined in the WURP would improve operational efficiency and are expected to benefit the long-term sustainability of agricultural practices in the Klamath Basin. Implementation of these programs will require future environmental compliance as appropriate.**

Power for Water Management

The Power for Water Management could affect land use in the Reclamation's Klamath Project area. The Power for Water Management program is intended to deliver power to eligible users at a cost that is targeted at or below the average cost for similarly situated Reclamation irrigation and drainage projects. The goals of the program include providing affordable electricity for efficient use, distribution, and management of water

within Reclamation's Klamath Project and the Klamath Basin NWR System, facilitating the return of water to the Klamath River as part of the implementation and administration of the On-Project Plan, and facilitating the implementation of the WURP and Off-Project Water Settlement (OPWAS). There are three components of the Power for Water Management – the Interim Power Program, a Federal Power Program, and a Renewable Power Program. Under the KBRA a power management entity would be created to manage the delivery of affordable power to eligible users.

- The Interim Power Program is intended to maintain the power cost target for eligible users while other programs from the KBRA are implemented. The program will help to offset the impacts of rising power prices on agricultural producers, and could prevent some agricultural producers from selling their property and/or converting it to other users. The Interim Power Program is unlikely to have an adverse effect on land use, agriculture, or forest resources.

- The Federal Power Program is a management program intended to obtain and provide for the transmission and delivery of federal preference power to eligible users. The implementation of the program is unlikely to have adverse effects on land use, agriculture, or forest resources.

- The Renewable Power Program is a combination of energy efficiency measures and renewable generation projects intended to reduce power costs for eligible power users. The Program includes development of a financial and engineering plan to identify efficiency measures and renewable energy resources. These include solar arrays, wind farms, and biomass energy facilities. These green power projects could be constructed on land currently used for agriculture or zoned for non industrial uses, which would have an adverse effect on land use, agriculture, or forest resources.

Implementation of the KBRA would not include construction or other projects that would conflict with existing zoning or Williamson Act contracts. However, green power projects, such as solar arrays or wind farms, could be constructed to replace part of the power generation capacity lost with the removal of the Four Facilities on land currently used for agriculture or zoned for non industrial uses. This would result in a change of land use should these potential projects be sited on agricultural lands. The potential land use conversions generated by siting and construction of renewable power projects would not be expected to contribute to any land use effects generated by the hydroelectric facility removal action. The KBRA Power for Water Management would have beneficial effects on land use, agriculture, and forest resources in the short term by creating incentives for agricultural producers. Impacts associated with siting and construction of renewable energy generation projects in the Renewable Power Program could generate significant, adverse, long term effects on land use and agriculture. However, other KBRA measures analyzed in this section are expected to benefit the long-term sustainability of agricultural practices in the Klamath Basin. **When considered with other KBRA programs that would benefit agriculture, implementation of the Power for Water**

Management would be expected to generate a less than significant impact on land use. These effects will be analyzed in future environmental documents as necessary.

Mazama Forest Project

The KBRA's Mazama Forest Project could result in the conversion of forest land to non-forest use or conflict with forest zoning. The Mazama Forest Project is a planned purchase of 90,000 acres of former reservation land by the Klamath Tribes. The land would be managed under the Klamath Tribes Forest Management Plan. The management of the adjacent Fremont-Winema National Forest would be influenced by the Mazama Forest Project under collaboration language from the federal Tribal Forest Protection Act. The project would allow for long term forest management and timber operations, and thus would not convert forest land to other uses or conflict with forest zoning. Implementation of specific plans and projects described in the KBRA would require future environmental compliance as appropriate. **The KBRA is not expected to convert forest land to non-forest use and would not conflict with forest zoning, therefore it is expected to result in no change from existing conditions.**

Alternative 3: Partial Facilities Removal of Four Dams

The effects of the Partial Facilities Removal of Four Dams Alternative would be similar to those described for the Proposed Action. However, the powerhouses at Copco 1, 2 and Iron Gate, and the warehouses and support buildings at Copco 2 would be left in place and shuttered for the foreseeable future. The shuttering would not constitute a change in land use, nor would it conflict with an applicable plan or policy. **Effects would be less than significant.**

Keno Transfer

The effects of the Keno Transfer would be the same as those described for the Proposed Action.

East and West Side Facilities

The effects of the East and West Side Facilities removal would be the same as those described for the Proposed Action.

KBRA

Under this alternative, the KBRA would be fully implemented and the potential effects would be the same as described for the Proposed Action.

Alternative 4: Fish Passage at Four Dams

The effects of the Fish Passage at Four Dams Alternative would be the same as those described above for the No Action/No Project Alternative, except that it would require the creation of new permanent roads to access fish ladder facilities.

Construction of permanent access roads could change land use. The Fish Passage at Four Dams Alternative would require the creation of new permanent roads. Although existing roads provide access to the KHP facilities, new roads would be needed for the fish passage alternative to provide permanent access to those facilities. Because these new

roads would be built on lands designated for industrial (dam) use, their construction would not conflict with applicable plans and policies or otherwise cause a significant land use impact. **The development of new permanent roads would be a less than significant land use impact.**

Trap and Haul – Programmatic Measure

Construction of fish handling facilities for trap and haul operations could change land use. Trap and haul operations would move fish around Keno Impoundment and Link River during times of poor water quality. Trap and haul operations would require construction of new fish handling facilities near Keno Dam and Link River Dam. Because these new facilities would be built on lands designated for industrial (dam) use, their construction would not conflict with applicable plans and policies or otherwise cause a significant land use impact. **The development of new fish handling facilities would be a less than significant land use impact.**

Alternative 5: Fish Passage at J.C. Boyle and Copco 2, Remove Copco 1 and Iron Gate

The effects of the Fish Passage at J.C. Boyle and Copco 2, Remove Copco 1 and Iron Gate Alternative would be the same as those described above for the Proposed Action with respect to removal of Copco 1 and Iron Gate Dams, and the same as the Fish Passage at Four Dams with respect to the new roads.

Trap and Haul – Programmatic Measure

Construction of fish handling facilities for trap and haul operations could change land use. The trap and haul measures around Keno Impoundment and Link River would have the same impacts under the Fish Passage at J.C. Boyle and Copco 2, Remove Copco 1 and Iron Gate Alternative as the Fish Passage at Four Dams Alternative. **The development of new fish handling facilities would be a less than significant land use impact.**

Mitigation Measures Associated with Other Resource Areas

Mitigation REC-1 would create a plan to develop recreational facilities and access points along the newly formed river channel between J.C. Boyle Reservoir and Iron Gate Dam. Recreation facilities, such as campgrounds and boat ramps, currently located on the edge of the reservoir would need to be replaced in appropriate areas near the new river channel once the reservoir is removed. The areas that would be used for the relocation are currently inundated and their development would not result in a land use conversion or change in forest land uses. **There will be no impact to forest or agricultural land uses resulting from the implementation of Mitigation Measure REC-1.**

3.14.5 References

Bureau of Land Management (BLM). 1993. BLM Redding Resource Management Plan and Record of Decision. June. Available online at: http://www.blm.gov/pgdata/etc/medialib//blm/ca/pdf/pdfs/redding_pdfs/reddingrmp.Par.1ccf3289.File.pdf/ReddingRMP-ROD-1993.pdf.

BLM. 1995. BLM Klamath Falls Resource Area ROD, RMP, and Rangeland Program Summary. May. Available online at: http://www.blm.gov/or/plans/files/kfalls_ROD_RMP.pdf.

BLM. 2008. BLM Medford District ROD and RMP. December. Available online at: http://www.blm.gov/or/plans/wopr/rod/files/wopr_medford_ROD.pdf.

California Department of Conservation (CDC). 2010. Important Farmland Mapping Categories and Soil Taxonomy Terms. Available online at: http://www.conservation.ca.gov/dlrp/fmmp/Documents/soil_criteria.pdf.

Department of the Interior (DOI), Bureau of Reclamation (Reclamation). 2009a. Lease Lands Facts and Figures, accessed from http://www.usbr.gov/mp/kbao/operations/land_lease/7_Facts_Figures/facts_and_figures.pdf on November 23, 2010

DOI. Reclamation 2009b: Klamath Project website. Accessed from http://www.usbr.gov/projects/Project.jsp?proj_Name=Klamath+Project on January 5, 2011

DOI. Reclamation 2009c. U.S. Bureau of Reclamation and MPGIS Service Center, 2009. Federal Water Contractors, Mid-Pacific Region [computer file]. Sacramento, CA: U.S. Bureau of Reclamation, MPGIS Service Center, 2009

DOI. Reclamation 2010a. Payments to Counties In-Lieu-of-Taxes Under Section 3, Public Law 88-567 (Kuchel Act), Fiscal Year 2009. July 28, 2010. U.S. Bureau of Reclamation Klamath Basin Area Office, Klamath Falls, Oregon.

DOI. Reclamation 2010b. Klamath Project Crop Reports for the 2009 crop year. February 4, 2010. U.S. Bureau of Reclamation Klamath Basin Area Office, Klamath Falls, Oregon.

Federal Energy Regulatory Commission (FERC). 2007. Final Environmental Impact Statement for Hydropower License, Klamath Hydroelectric Project, FERC Project No. 2082-027, FERC/EIS-0201F. Washington, DC, Federal Energy Regulatory Commission, Office of Energy Projects, Division of Hydropower Licensing.

Gallagher, M. 2011. Personal communication between M. Gallagher, Planner III, , Klamath County, and Darcy Kremin, Senior Environmental Planner, Cardno ENTRIX. January 14 and 18.

Green, M. 2011. Program Manager, Land Lease Program, Klamath Basin Area Office, Bureau of Reclamation, Klamath Falls, OR. Telephone communication with Stephen Umbertis, CDM on March 23, 2011.

Klamath County. 2010a. "Welcome to Klamath County, Oregon." Available online at: http://www.klamathcounty.org/.

Klamath County. 2010b. Community Development – Planning Division. Comprehensive Plan for Klamath County, Oregon. January Audit. Available online at: http://www.co.klamath.or.us/ComDevelopment/comprehensive_plan.htm

Klamath Tribes. 2008. A Plan for the Klamath Tribes' Management of the Klamath Reservation Forest. May. Available online at: http://www.klamathtribes.org/information/background/documents/Klamath_Plan_Final_May_2008.pdf.

Modoc County. 1988. Modoc County General Plan. Goals, Policies, and Action Plans.

Modoc County. 2011. Official Site for the County of Modoc. www.modoccounty.us , accessed May 11, 2011.

Oregon Zoning [computer file]. Salem, OR: Department of Land Conservation and Development, 1998. Link: http://oregon.gov/DAS/EISPD/GEO/alphalist.shtml#Z

Plucker, Greg. 2011. Personal communications between G. Plucker, Deputy Director of Planning, Siskiyou County, and Darcy Kremin, Senior Environmental Planner, Cardno ENTRIX. January 14 and February 9.

Regional Ecosystem Office. 2006. Northwest Forest Plan (NWFP) Overview. Website, last updated November 28, 2006. http://www.reo.gov/general/aboutnwfp.htm accessed August 2nd, 2011.

Siskiyou County. 1980. Siskiyou County General Plan: Land Use and Circulation Element. Adopted August (land use), November (circulation). Available online at: http://www.co.siskiyou.ca.us/PHS/planning/docs/generalplan/Land%20Use%20&%20Circulation%20Element.pdf.

Siskiyou County. 1997. Siskiyou County General Plan Land Use Policies. Revised October 9, 1997. Available online at: http://www.co.siskiyou.ca.us/PHS/planning/docs/generalplan/General%20Plan%20Land%20Use%20Policies%2010%2009%201997.pdf.

Siskiyou County. 2010. "About Siskiyou County." Available online at: http://www.co.siskiyou.ca.us/website/about.aspx.

U.S. Census Bureau. 2000. 2000 United States Census Summary File 3. Available: http://factfinder.census.gov/jsp/saff/SAFFInfo.jsp?_lang=en&_sse=on&_content=sp4_decennial_sf3.html&_title=Summary+File+3+%28SF+3%29

U.S. Census Bureau. 2008. 2000-2008 American Community Survey. Available:
ECONorthwest. 2007. Key Findings From the Economic and Housing Comprehensive Plan Elements. Memo to the Jackson County Board of Commissioners and Planning Commission. Available: http://www.co.jackson.or.us/Files/Key%20Findings%20Memo%204_4_07.pdf

U.S. Department of Agriculture (USDA), U.S. Fisheries Service (USFS). 1989. Land and Resource Management Plan, Fremont National Forest. Pacific Northwest Region, 1989. Available online at:
http://www.fs.usda.gov/wps/portal/fsinternet/!ut/p/c5/04_SB8K8xLLM9MSSzPy8xBz9CP0os3gjAwhwtDDw9_AI8zPwhQoY6IeDdGCqCPOBqwDLG-AAjgb6fh75uan6BdnZaY6OiooA1tkqlQ!!/dl3/d3/L2dJQSEvUUt3QS9ZQnZ3LzZfME80MEkxVkFCOTBFMktTNVVJNDAwMDAwMDA!/?navtype=BROWSEBYSUBJECT&cid=fsbdev3_061824&navid=130100000000000&pnavid=1300000000000000&ss=110602&position=Not%20Yet%20Determined.Html&ttype=detailfull&pname=Fremont%20Winema%20National%20Forest-%20Planning

USDA, USFS. 1990. Land and Resource Management Plan, Winema National Forest. Pacific Northwest Region, 1990. Available online at:
http://www.fs.usda.gov/wps/portal/fsinternet/!ut/p/c5/04_SB8K8xLLM9MSSzPy8xBz9CP0os3gjAwhwtDDw9_AI8zPwhQoY6IeDdGCqCPOBqwDLG-AAjgb6fh75uan6BdnZaY6OiooA1tkqlQ!!/dl3/d3/L2dJQSEvUUt3QS9ZQnZ3LzZfME80MEkxVkFCOTBFMktTNVVJNDAwMDAwMDA!/?navtype=BROWSEBYSUBJECT&cid=fsbdev3_061824&navid=130100000000000&pnavid=1300000000000000&ss=110602&position=Not%20Yet%20Determined.Html&ttype=detailfull&pname=Fremont%20Winema%20National%20Forest-%20Planning

USDA, Forest Service (USFS). 1995a. Forest Service Klamath National Forest Land and Resource Management Plan. Available online at:
http://www.fs.usda.gov/wps/portal/fsinternet/!ut/p/c4/04_SB8K8xLLM9MSSzPy8xBz9CP0os3gjAwhwtDDw9_AI8zPyhQoY6BdkOyoCAGixyPg!/?navtype=BROWSEBYSUBJECT&cid=fsm8_049841&navid=130100000000000&pnavid=1300000000000000&ss=110505&position=Welcome.Html&ttype=detail&pname=Klamath%2520National%2520Forest%2520-%2520Planning.

USDA, USFS. 1995b. Land and Resource Management Plan: Six Rivers National Forest . Available online at:
http://www.fs.usda.gov/wps/portal/fsinternet/!ut/p/c5/04_SB8K8xLLM9MSSzPy8xBz9CP0os3gjAwhwtDDw9_AI8zPwhQoY6IeDdGCqCPOBqwDLG-AAjgb6fh75uan6BdnZaY6OiooA1tkqlQ!!/dl3/d3/L2dJQSEvUUt3QS9ZQnZ3LzZfME80MEkxVkFCOTBFMktTNVVJNDAwMDAwMDA!/?navtype=BROWSEBYSUBJECT&cid=stelprdb5084033&navid=130100000000000&pnavid=1300000000000000&ss=110

510&position=Not%20Yet%20Determined.Html&ttype=detailfull&pname=Six%20Rivers%20National%20Forest-%20Planning.

U.S. Fish and Wildlife Service (USFWS). 2009. Refuge website, http://www.fws.gov/klamathbasinrefuges/tulelake/tulelake.html, accessed Nov 23, 2010.

USFWS. 2010. Planning Update #1/ Spring 2010. http://www.fws.gov/klamathbasinrefuges/ accessed Nov 23, 2010.

Yreka, City of. 2003. City of Yreka General Plan Update 2002-2022. Accessed on January 4, 2011. Available online at: http://ci.yreka.ca.us/sites/ci.yreka.ca.us/files/City-Government/Planning/General-Plan.pdf